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GOLD
GROWTH THROUGH DISCOVERY

JOHN C. TUMAZOS *504-4233*

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GOLD MINING INDUSTRY

Gold Mining Companies Must Prepare for Another Tough Year To Insure Survival

These remarks were prepared in advance by John C. Tumazos for presentation as moderator's comments at the 1993 DLJ Gold Exploration Seminar in New York on January 12-13.

LONG-TERM REASONS TO FAVOR GOLD

We do not expect today's gold prices to last, and believe that longer-term gold prices need to be roughly $100 per ounce above current levels to sustain gold output in the five largest gold producing nations around the world. At present the global gold mining industry is not replacing reserves nor maintaining underground mine development schedules.

Jewelry consumption, which has exceeded mine output each year since 1989, is a particular favorable underpinning to gold prices. Although jewelry demand growth has approached 9% in 1992, we have simulated gold markets in 1993-1996 based on a 4% demand growth rate that is more consistent with global population and GNP growth rates. Our estimate of 2% decay rate in global gold mine output suggests that the annual supply shortfall in the gold market will increase by more than 6% of consumption or over 125 metric tonnes annually. We estimate that the disinvestment necessary to balance the market will rise from 130 metric tonnes in 1991 and 292 in 1992 to 387 in 1993 and 815 by 1996 (Table 1), which represents 33% of prospective gold supply by 1996. We do not believe that central banks, mining company forward sales, European institutions, Middle Eastern sheiks or individual investors are likely to dishoard on that scale. Several prominent North American gold mining companies no longer hedge, for example.

Additional information is available upon request.

Global Gold Supply and Demand (metric tonnes)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Global Mine Output	1271.8	1303.0	1366.0	1452.2	1506.5	1578.8	1649.0	1743.6	1919.0	2063.8	2132.1	2156.6	2180	2155	2100	2071	2010
Western Scrap	493.0	244.1	243.3	294.1	291.4	317.4	490.2	431.8	350.8	359.8	490.0	409.5	400	425	425	425	450
Total New Supply	1764.8	1547.1	1609.3	1746.3	1797.9	1896.2	2139.2	2175.4	2269.8	2423.6	2622.1	2566.1	2580	2580	2525	2496	2460
Western Jewelry	513.2	798.2	935.6	842.4	1092.9	1187.1	1167.8	1214.5	1531.8	1907.0	2036.7	2111.1	2300	2392	2488	2587	2691
Western Electronics	95.2	92.8	88.8	106.4	130.4	114.4	123.0	124.0	132.7	136.5	147.8	146.7	147	150	153	156	159
Western Dentistry	64.3	65.2	60.6	51.3	52.4	53.3	51.1	47.7	50.5	50.9	52.7	55.3	55	55	55	55	55
50% of W. Official Coinage	122.5	113.5	81.7	88.0	62.6	61.6	169.2	103.2	70.8	65.9	59.1	75.1	65	65	65	65	65
W. Indus., Decorative, Medals	102.8	91.1	93.9	86.7	88.2	68.0	67.4	71.6	78.2	82.3	84.7	88.2	85	85	85	85	85
Former Communist Use	110.0	120.0	130.0	140.0	150.0	160.0	170.0	180.0	190.0	200.0	210.0	220.0	220	220	220	220	220
Total Demand	1008.0	1280.8	1390.6	1314.8	1576.5	1644.4	1748.5	1741.0	2054.0	2442.6	2591.0	2696.4	2872	2967	3066	3168	3275
Implied Investment	756.8	266.4	218.7	431.6	221.5	251.8	390.7	434.5	215.8	-18.9	31.2	-130.3	-292	-387	-541	-672	-815
Cumulative Investment	756.8	1023.2	1241.9	1673.4	1894.9	2146.7	2537.4	2971.8	3187.6	3168.7	3199.8	3069.6	2778	2391	1850	1178	363

Source: Gold Fields Services for historical data; DLJ Estimates for Forecasts and Former Communist Demand History

Clearly, the twin U.S. deficits, low interest rates in the United States, a gradual end to the credit crunches in America, Japan and Europe, and the expansionary policies of the new Administration may benefit gold. It is no accident that the dollar weakened 2% following the announcement of Senator Lloyd Bentsen as the Treasury Secretary nominee. Traditionally, gold and other commodity prices rebound as the global economy grows.

Most important, current gold prices are too low to sustain the gold mining industry. Our estimate of 2% annualized mine output decay from 1993 to 1996 may prove generous if gold prices continue to drop. Most new gold mine projects around the world do not offer 10% pretax returns below a $400 per ounce gold price. It is a given that all commodity markets eventually recover after a sustained period of low prices force participants to exit, and gold's demand growth profile provides some added comfort.

NEAR-TERM IMPEDIMENTS TO A GOLD PRICE RALLY

The gold market has several hurdles to overcome before it can rally: 1) the tendency of the U.S. dollar to appreciate in the second half of 1992, 2) stubborn Bundesbank tight monetary policy with 8% German long-term interest rates, 3) gradual 2% M2 money supply growth rates in the United States, 4) generally tight bank credit conditions globally, 5) investor fears of central bank bullion reserve liquidations, 6) investor fears of gold mining company forward sales, 7) continued private disinvestment and 8) general investor disinterest.

None of these problems is insurmountable. Gold prices now have fallen in nominal terms for five straight years, however, since peaking near $500 an ounce in mid-December 1987 and averaging $486 for that month. Average prices have dropped from $446 in 1987 to $437 in 1988 to $381 in 1989 to $384 in 1990 to $362 in 1991 to roughly $344 an ounce in 1992. This is the longest period of sustained gold price decline since gold price decontrols from the $35 per ounce level began to be implemented in 1968. Gold price volatility has contracted along with the gold price, which has added to investor disinterest.

Twenty-six months have passed since the Federal Reserve began to attempt to ease monetary policy in November 1990 in the midst of the Persian Gulf Crisis. Commodity price deflation has continued despite bond and stock market rallies, lower U.S. interest rates and six straight quarters of U.S. real GNP growth. Now that an "end of recession" rally seems tardy in the United States, the next hopes will be center on either an "end of German or Japanese recession" or else simply waiting for a traditional cyclical peak in commodity pricing several years from now.

REVISED GOLD PRICE FORECASTS

We have reduced our gold price forecast to $345 per ounce from $370 for 1993 and to $360 from $400 for 1994. We have remained at $400 for 1995 and 1996 and $425 for 1997-2000. We have reduced our earnings estimates for most of the gold mining companies for 1993 and 1994 accordingly (see Table 3). Our reduced gold price forecasts are not consistent with economics necessary to sustain output in the five principal gold producing regions: South Africa, the United States, the Commonwealth of Independent States (CIS), Australia and Canada. The arithmetic involved in reaching gold prices of $370 per ounce for 1993 requires nearly a $400 fourth quarter average to offset recent prices near $335, which seems farfetched at the moment in view of near-term monetary, exchange rate and inflation trends. Oil prices have not been sufficient to encourage North American reserve replacement for two decades, and the temptation to expect a $100 price rally simply because gold mining economics require it may be cause for folly. Only three of the 35 major South African gold mines—Kloof at $247, Driefontein Consolidated at $205 and Elandsrand at $248—had working costs at competitive levels in the September quarter. Twenty of South Africa's major mines had costs over $300 an ounce.

OUR INVESTMENT RATINGS REFLECT A FAVORABLE BIAS TOWARD WELL FINANCED GOLD COMPANIES

Our emphasis of gold shares continues to center on the better financed firms that may be able to seize opportunities in the current tough market environment. We are also attracted to the major Carlin Trend companies, whose long-term exploration prospects may benefit from the fertility of their landholdings. Concentration on the better financed companies will be the best strategy until a robust gold price rally to well over $360 develops.

We currently include ***American Barrick*** and ***Newmont Mining*** on our *Recommended List* due to their superior finances, superior cost positions and mine development efforts. We rate ***Coeur d'Alene Mines*** *very attractive* owing to the company's cash balances of more than half its stock market value and the potential of silver prices to rebound as well as gold. We recently reduced our investment rating for ***Canyon Resources*** to *neutral* from an *Analyst's Buy* because the continued poor gold price environment has made it tougher for Canyon to raise the capital necessary to maintain its ownership stakes and develop its properties. We rate ***Battle Mountain, Crown Resources, FMC Gold, LAC Minerals, Newmont Gold, Pegasus Gold*** and ***Placer Dome*** *moderately attractive* as well, which connotes a 5-20% expected return in DLJ's rating criteria. We rate ***Echo Bay Mines, Teck Corp., Homestake Mining*** and ***Freeport-McMoRan Copper and Gold*** *neutral*, and ***Amax Gold and Freeport-McMoRan Inc.*** *unattractive*.

LACK OF ACCESS TO CAPITAL FOR GOLD MINING FIRMS

North American gold mining firms face the most hostile business climate imaginable today. Most companies cannot afford exploration programs, those lucky enough to have discovered new deposits often cannot finance or obtain environmental permits to extract their resources, the North American environmental atmosphere is hostile, the $8.90 one-year COMEX gold price contango provides a mere 2.7% one-year return for hedging activities, commercial banks are reluctant to lend for development of gold deposits having more than $200 per ounce in direct mining costs as today's gold prices provide little margin for a desirable threefold interest coverage ratio on a long-life property, the SEC may someday ask gold mining companies to apply current prices to their annual reserve disclosures, common equity offerings are not available to many firms and even a stronger concern like ***Newmont Mining*** had to resort to a relatively expensive 5.5% convertible preferred to raise capital. ***Echo Bay Mines*** and ***FMC Gold*** have had their joint venture partners abdicate mining properties to them, which may be an increasing trend.

Gone are the days of $450 per ounce spot prices, 10% one-year contangoes in excess of spot prices, gold bullion loans at 2% annual costs, easy common stock offerings at 35 times earnings, Canadian flow-through exploration shares or European investor interest. There are no longer: 1) a tent city along the Humboldt River on the east side of the Carlin Tunnel, 2) a 90-day waiting list for reputable hotels in Battle Mountain, 3) a need for analysts to phone mining companies to borrow a bed in their geologists' trailer apartments in Battle Mountain, 4) fully booked flights to Elko or Ely or 5) reasons to make a reservation for a rental car in Elko.

STRATEGIES TO INSURE SURVIVAL FOR ANOTHER YEAR OR TWO AT ANOTHER 5% GOLD PRICE DECLINE

Past speakers at our annual seminar included ***Galactic Resources, Northgate Exploration,*** and ***International Corona***, which have not survived after implementing financial strategies requiring gold prices nearer to $400 an ounce. ***Freeport-McMoRan Gold Co.*** has chosen to sell out, winning better returns for its shareholders in a falling gold market. ***Homestake Mining, Amax Gold, LAC Minerals, FMC Gold, Placer Dome, Battle Mountain, Pegasus*** and others have made acquisitions in the 1989-1992 time frame that could have been made less expensively if the buyers had waited.

Clearly a prudent manager must have a realistic contingency plan for another 5% decline in gold prices to perhaps $310 per ounce that extends for another year or two. One unpleasant scenario involves a "saucer-shaped" bottom in which prices simply stay near current levels. Gold mining companies that are producing less than 400,000 ounces annually or have less than a $400 million stock market capitalization appear more vulnerable since they have least access to equity markets or lenders. A prudent investor must consider the same contingencies in order to measure risk and returns.

In our view, only five companies in the smaller size class under 400,000 ounces of future gold output or $400 million in stock market value are completely secure financially. ***Franco-Nevada*** and ***Euro-Nevada*** have cash balances and virtually no operating expenses or capital investment requirements. ***Teck Corporation*** has a strong balance sheet, low costs at its Hemlo units and substantial nongold assets. ***FMC Gold and Coeur d'Alene Mines*** each have cash balances of more than $150 million even if their reduced mine operations do not generate much new cash next year.

The remaining companies in the smaller size class below the top 14-sized producers must 1) take measures to avert a liquidity crisis in the next two years and 2) preserve the upside potential for their shareholders' values to recover in the future. Simple cost controls applied to operations, exploration or administration cannot generate enough cash for some companies.

Some organizations face capital commitments to continue existing operations, develop new mines, repay debts or fund losses. None of the means to raise external capital today is attractive. The public equity market, debt markets, bank loans, joint venture opportunities or outright asset sales are all depressed. We do not expect bank lenders to renew credits in view of the anemic interest coverage ratios or relatively short reserve lives that the typical gold property offers today. We do not expect outside auditors, common stock underwriters or the SEC to strictly police the use of the word "reserve," although clearly "reserves" that do not offer a 5% return on capital at current gold prices have limited resale value.

The shareholders of a public company do not benefit when it issues stock at low prices in desperation to bridge a short-term funding need. It would be better to sell the entire concern at the market price or perhaps a modest premium rather than drive the stock price down by issuing shares into a depressed market.

MERGERS AND CONSOLIDATIONS EMINENTLY LOGICAL

Buyers remain available when entire companies are put up for sale. The underfinanced companies, whether larger or smaller sized, have their best opportunity to preserve shareholder value in merging with stronger companies in common stock exchanges, which offer upside recovery potential to the shareholders of both firms.

The larger-sized firms ought to save at least $10 million in annual administrative and exploration expenses and the smaller companies at least $4 million annually via mergers. ***Homestake Mining*** estimates that it will save $25 million annually simply from cutting 180 administrative and exploration personnel before considering other merger savings.

Assuming reasonable exchange ratios can be agreed upon, the losers in a merger are the shareholders of illiquid concerns or the redundant employees. The reluctance of large shareholders to recognize lost value or the anxieties of potentially redundant senior managers may delay the occurrence of some obvious mergers.

Notwithstanding, it appears that perhaps one-third of the North American gold mining companies under 400,000 ounces in size or $400 million in market value and perhaps several of the larger concerns will merge into larger concerns in 1993 or 1994. We applaud this trend because it will create larger, better capitalized investment vehicles with reduced aggregate administrative expenses. We do not expect the creative activity of unemployed exploration personnel to be lost inasmuch as such individuals usually resurface at smaller, emerging firms.

APPROPRIATE ROLE OF WELL-CAPITALIZED FIRMS IS TO SEIZE OPPORTUNITY

We cannot stress enough that the appropriate role of the well-capitalized or cash-rich firms is to seize opportunities. ***American Barrick, Newmont Mining, Placer Dome, RTZ, Minorco, Teck Corp., LAC Minerals, FMC Gold, Coeur d'Alene Mines, Franco-Nevada*** and ***Euro-Nevada*** are the best positioned companies to make acquisitions from the standpoint of liquidity. As the most probable cash buyers on the market they can choose among the potential sellers. Of course, numerous other players may enter the fray in common stock-based acquisitions.

Several of these fine firms decline to acquire gold properties, however, owing to the poor financial returns that acquisition candidates offer. For these reasons ***Placer Dome, Teck Corporation, Cambior, LAC Minerals, Minorco, Anglo-American*** and ***RTZ*** recently have bought into copper or zinc properties. The redeployment of capital or development expertise into base metals poses a threat to the underfinanced gold producers that wait until it is too late to decide to sell out. Clearly the companies unable to find mating partners face unpleasant financial realities until gold prices rebound markedly.

UPDATED GOLD MINE VALUATION MODELS

At present the market values the top 15 North American gold producers at roughly $1,525 per ounce of estimated 1996 output, $128 per ounce of recoverable reserves as defined to exclude higher cost "reserves," roughly 12 times estimated 1993 cash flow and roughly 25 times estimated 1993 earnings (Table 2). Average valuations have been relatively stable considering the erosion in gold prices and unfulfilled investor expectations of recent months.

The usefulness of the price/earnings ratios as analytic tools is debatable today. At least one-third of the top 15 gold producers and at least half of the smaller companies are not likely to report prof-

Table 2

NORTH AMERICAN GOLD VALUATION MODELS

Company	Price 1/4/93	Rank By Size	Output 1996E Net Gold-Equiv Thous. Oz	Total Cap.Per Oz. 1996E Output	Price to Cash Flow 1992E	Price to Cash Flow 1993E	Price to Cash Flow 1996E	P/E 1992E	P/E 1993E	P/E 1996E	Capitaliz. (Class 1)	Reserves (Globally)	Net Debt + Cap. Exp. / Mkt.Cap.	1996E Production Per share (.01 oz)	1996E EPS Change To $10 Gold in cents/share
Placer Dome Inc#	11.25	1	1956	1133	8.7	8.7	8.7	26.8	29.6	25.0	301	**179**	19%	0.76	3.8
Newmont Mining#	40.50	2	1720	1772	21.3	22.5	12.5	29.6	36.8	20.3	160	**139**	24%	2.31	18.0
Newmont Gold Co#	31.25	3	1700	1811	20.8	18.4	13.0	39.1	34.7	20.8	154	**154**	12%	1.62	12.6
American Barrick#	30.38	4	1668	2783	17.4	13.2	10.5	24.3	17.4	13.8	172	**172**	13%	1.14	8.9
Homestake Mining#	10.63	5	1400	1111	12.5	11.2	11.8	NM	NM	42.5	102	**102**	50%	1.03	7.2
Freeport-M Cu+Au	22.13	6	1093	2023	19.1	20.9	11.3	33.0	40.2	18.0	NM	**74**	16%	0.50	2.5
LAC Minerals #	5.00	7	917	783	5.6	6.3	5.6	NM	NM	33.3	124	**92**	42%	0.61	3.1
Echo Bay Mines#	4.75	8	730	945	7.3	7.9	5.9	NM	NM	21.6	59	**59**	122%	0.60	4.2
Battle Mountain#	5.00	9	557	1075	12.2	8.3	4.5	NM	NM	14.3	313	**114**	112%	0.66	4.6
Cambior	9.34	10	550	643	6.5	5.3	4.4	29.2	25.2	19.9	295	**128**	105%	1.49	7.5
Pegasus Gold	14.00	11	497	923	8.8	8.5	7.0	NM	41.2	23.3	133	**133**	62%	1.52	10.6
Santa Fe Pacific#	13.00	12	475	NM	NM	NM	10.8	16.3	13.0	9.3	99	**NM**	13%	0.26	1.8
Hemlo Gold	6.00	13	460	1099	10.9	10.9	10.0	17.6	17.6	21.4	72	**72**	0%	0.48	2.4
Amax Gold Inc	8.50	14	403	1810	17.6	15.5	10.0	35.4	NM	50.0	384	**209**	87%	0.54	3.8
TVX Gold	1.97	15	401	1083	5.6	6.0	3.9	24.6	32.8	11.6	284	**71**	84%	0.22	1.5
Teck Corp	13.27	16	350	384	13.3	12.6	7.6	29.5	29.5	11.1	29	**29**	5%	0.43	2.1
Royal Oak Mines	1.50	17	340	321	7.5	5.4	4.3	9.4	7.5	5.0	55	**55**	18%	0.45	3.1
FirstMiss Gold	5.63	18	225	581	4.8	4.5	4.7	23.4	18.8	22.5	104	**104**	59%	1.25	8.8
Nerco#	12.00	19	219	NM	NM	NM	NM	NM	12.6	12.0	456	**NM**	201%	0.46	3.2
Hecla Mining#	7.50	20	194	1454	15.0	14.7	10.7	NM	NM	NM	189	**189**	77%	0.43	3.0
Coeur d'Alene	10.50	21	188	408	NM	NM	8.4	NM	NM	52.5	46	**39**	11%	0.50	3.5
Agnico Eagle	4.25	22	178	810	7.1	7.7	7.1	NM	21.3	17.0	111	**111**	32%	0.56	4.0
FMC Gold Co@	4.38	23	175	952	6.7	10.9	15.6	19.0	NM	NM	104	**104**	-25%	0.24	1.7
Bema Gold	0.62	24	116	209	NM	NM	1.6	NM	NM	2.1	61	**16**	289%	0.30	2.1
Glamis Gold	4.06	25	115	742	5.6	5.1	4.1	50.8	29.0	16.3	95	**95**	26%	0.55	3.8
Crown Resources*	6.75	26	100	875	NM	NM	6.1	NM	NM	7.5	109	**109**	-5%	0.73	5.1
Franco-Nevada	20.65	27	100	2726	25.8	19.7	11.8	25.8	19.7	11.8	151	**151**	-11%	0.68	4.7
Dickenson Mines	3.00	28	95	965	10.0	10.0	5.0	42.9	55.6	12.0	78	**78**	84%	0.46	3.2
Rayrock	8.06	29	90	849	7.3	6.0	5.4	NM	NM	26.9	130	**130**	84%	0.55	3.9
Atlas Corp.	4.88	30	80	386	6.7	7.5	4.9	NM	NM	NM	75	**75**	130%	1.26	8.8
Canyon Resources*	1.75	31	80	727	6.3	17.5	8.8	NM	NM	NM	36	**36**	122%	0.27	1.9
Euro-Nevada	12.58	32	75	2397	44.9	36.0	15.7	44.9	36.0	15.7	120	**120**	-16%	0.44	3.1
USMX INC.	2.63	33	60	523	13.1	12.2	5.8	NM	NM	13.1	42	**42**	5%	0.40	2.8
Avg Valuation of top 15 Producers				**1357**	12.4	11.7	**8.7**	27.6	28.9	23.0	189	**121**	**51%**	0.92	6.2
Avg Valuation of Smaller Producers				**900**	12.4	12.1	**7.5**	27.9	28.8	22.1	110	**87**	**60%**	0.55	3.8

Comments: (1) to calculate "total Cap. per ounce of production" we added the stock market capitalization to debt-equivalents and subtracted cash and securities. We converted silver output into gold at the current ratio of 90 to one.

(2) In our earnings sensitivity to metals price changes we assumed a 50% marginal tax rate for Quebec, Ontario and Papua New Guinea and a 30% marginal tax rate elsewhere.

(3) Some valuation ratios are lower because their mines have short lives or do not generate free cash flows. Thus, interpretation of these ratios depends on inferred asset quality.

(4) "Class 1" reserves are located in the U.S., Canada and Australia, while "global" reserves include all properties worldwide.

(5) We have excluded negative or extreme outlying data points in our calculations of industry average valuations above.

Source : Donaldson Lufkin & Jenrette

Table 3

TRADITIONAL VALUATION MEASURES

Company	EPS and Gold Price $382 1989	$384 1990	$362 1991	$344 1992E	**$345 1993E**	$400 1996E	Cash Flow Per Share 1989	1990	1991	1992E	**1993E**	1996E	Book Value Per Share 1990	1991	1992E	1993E	ROE 1992E	ROE 1993E	Price/ Book 1993E	1993E Pretax Breakeven Price
Placer Dome Inc#	0.45	0.81	-0.94	0.42	**0.38**	0.45	0.94	1.29	1.25	1.30	**1.30**	1.30	7.51	6.26	6.43	6.56	6.6%	5.9%	171%	$290
Newmont Mining#	1.87	5.06	1.39	1.37	**1.10**	2.00	2.10	1.75	1.70	1.90	**1.80**	3.25	1.47	2.97	3.74	4.24	40.8%	27.6%	955%	$305
Newmont Gold Co#	1.13	1.35	1.20	0.80	**0.90**	1.50	1.85	2.14	1.75	1.50	**1.70**	2.40	5.85	7.00	7.75	8.60	10.8%	11.0%	363%	$275
American Barrick#	0.30	0.45	0.68	1.25	**1.75**	2.20	0.77	0.89	1.15	1.75	**2.30**	2.90	4.81	5.97	6.98	8.60	19.3%	22.5%	353%	$250
Homestake Mining#	0.65	0.21	-1.30	-1.10	**0.00**	0.25	1.05	0.54	0.27	0.85	**0.95**	0.90	8.14	6.64	3.62	3.42	-21.4%	0.0%	311%	$345
Freeport-M Cu + Au	0.58	0.56	0.58	0.67	**0.55**	1.23	0.89	0.96	0.89	1.16	**1.06**	1.96	1.15	1.21	3.21	3.16	30.3%	17.3%	700%	$200
LAC Minerals #	0.31	-0.53	0.12	0.04	**-0.06**	0.15	0.60	0.96	1.04	0.90	**0.80**	0.90	4.85	5.30	5.23	5.06	0.8%	-1.2%	99%	$355
Echo Bay Mines#	0.16	-0.60	0.07	-0.09	**-0.15**	0.22	0.97	0.91	0.87	0.65	**0.60**	0.80	4.37	4.62	4.46	4.24	-2.0%	-3.4%	112%	$375
Battle Mountain#	0.40	-0.24	-0.02	-0.60	**-0.05**	0.35	0.80	0.87	0.68	0.41	**0.60**	1.10	3.58	3.94	3.29	3.19	-16.6%	-1.5%	157%	$355
Cambior	0.62	0.68	0.38	0.32	**0.37**	0.47	0.99	1.44	1.33	1.43	**1.75**	2.10	8.68	8.94	8.70	8.95	3.6%	4.2%	104%	$325
Pegasus Gold	0.41	-1.55	0.37	-0.24	**0.34**	0.60	1.62	1.22	1.47	1.60	**1.65**	2.00	6.33	8.82	8.48	8.72	-2.8%	4.0%	161%	$325
Santa Fe Pacific#	0.09	-0.69	0.54	0.80	**1.00**	1.40	NM	NM	0.15	0.25	**0.25**	0.30	5.27	5.71	6.41	7.31	13.2%	14.6%	178%	$300
Hemlo Gold	0.31	0.23	0.13	0.34	**0.34**	0.28	0.57	0.75	0.63	0.55	**0.55**	0.60	1.67	2.10	2.28	2.46	15.5%	14.3%	244%	$225
Amax Gold Inc	0.55	0.47	0.35	0.24	**0.07**	0.17	0.80	1.23	0.82	0.48	**0.55**	0.85	2.01	2.27	3.54	3.53	8.3%	2.0%	241%	$375
TVX Gold	-0.03	0.10	0.05	0.08	**0.06**	0.17	0.02	0.19	0.26	0.35	**0.33**	0.50	1.34	1.41	1.49	1.55	5.5%	3.9%	127%	$317
Teck Corp	1.15	0.95	0.39	0.45	**0.45**	1.20	1.50	1.79	1.31	1.00	**1.05**	1.75	7.98	8.47	8.75	9.03	5.2%	5.1%	147%	$275
Royal Oak Mines	NM	-0.90	0.21	0.16	**0.20**	0.30	NM	0.01	0.30	0.20	**0.28**	0.35	0.80	0.72	0.91	1.11	19.6%	19.8%	135%	$320
FirstMiss Gold	0.31	0.01	0.00	0.24	**0.30**	0.25	0.50	0.83	0.67	1.16	**1.25**	1.20	2.32	2.32	2.56	2.86	9.8%	11.1%	197%	$320
Nerco#	1.90	2.05	2.12	-5.50	**0.95**	1.00	0.80	0.82	0.54	0.00	**0.00**	0.25	15.22	17.34	11.84	12.79	-37.7%	7.7%	94%	$410
Hecla Mining#	-0.83	0.19	-0.51	-0.40	**-0.25**	0.20	0.17	1.04	0.40	0.50	**0.51**	0.70	4.94	4.95	4.72	4.47	-8.3%	-5.4%	168%	$390
Coeur d'Alene	-0.29	-0.30	-0.94	-0.25	**-0.45**	0.20	1.19	0.39	-0.05	0.11	**0.12**	1.25	13.83	12.01	11.61	11.01	-2.1%	-4.0%	95%	$400
Agnico Eagle	-0.57	-1.60	-2.49	0.24	**0.20**	0.25	0.09	0.20	0.26	0.60	**0.55**	0.60	4.17	1.41	1.57	1.70	16.1%	12.2%	250%	$290
FMC Gold Co@	0.75	0.56	0.10	0.23	**-0.04**	0.03	1.00	0.88	0.53	0.65	**0.40**	0.28	3.27	3.32	3.50	3.41	6.7%	-1.2%	128%	$355
Bema Gold	-0.09	-0.03	-0.09	-0.10	**-0.16**	0.30	0.02	0.09	-0.07	-0.05	**-0.11**	0.40	0.87	0.86	0.76	0.59	-12.4%	-24.1%	105%	NM
Glamis Gold	-0.26	0.27	0.25	0.08	**0.14**	0.25	0.10	0.40	0.61	0.72	**0.80**	1.00	1.56	1.59	1.62	1.71	5.0%	8.4%	238%	$300
Crown Resources*	-0.12	0.08	-0.09	-0.50	**-0.30**	0.90	-0.13	0.05	-0.22	-0.15	**-0.30**	1.10	1.66	1.66	1.16	0.86	-35.5%	-29.7%	785%	$500
Franco-Nevada	0.25	0.34	0.50	0.80	**1.05**	1.75	0.25	0.34	0.50	0.80	**1.05**	**1.75**	1.35	3.31	3.87	4.68	22.3%	24.6%	441%	$50
Dickenson Mines	0.44	-1.93	0.37	0.07	**0.05**	0.25	0.49	0.23	0.50	0.30	**0.30**	0.60	2.59	2.81	2.88	2.94	2.5%	1.9%	102%	$350
Rayrock	0.34	0.30	0.20	0.00	**-0.02**	0.30	1.31	1.50	1.40	1.10	**1.35**	1.50	3.31	3.39	3.39	3.37	0.0%	-0.6%	239%	$345
Atlas Corp.	-0.86	0.88	-1.25	-1.18	**-0.90**	0.25	1.17	1.63	0.88	0.73	**0.65**	1.00	6.17	5.14	3.96	5.81	-25.9%	-18.4%	84%	$380
Canyon Resources*	-0.33	-0.28	0.10	-0.54	**-0.10**	0.05	-0.05	0.01	0.31	0.28	**0.10**	0.20	1.34	1.44	0.93	0.83	-45.6%	-11.4%	211%	$400
Euro-Nevada	0.08	0.15	0.23	0.28	**0.35**	0.80	0.08	0.15	0.23	0.28	**0.35**	0.80	2.19	3.73	4.18	4.50	7.1%	8.1%	280%	$100
USMX INC.	0.18	0.21	0.14	0.01	**0.02**	0.20	0.40	0.38	0.29	0.20	**0.22**	0.45	1.25	1.46	1.47	1.69	0.7%	1.0%	156%	$330
Average Values Top 15 Gold Producers																	**7.5%**	**8.1%**	**285%**	**$308**
Average Values of Smaller Producers																	**-4.0%**	**0.3%**	**214%**	**$324**

Source : Donaldson Lufkin & Jenrette

Table 4

SUMMARY STOCK INFORMATION

Company	Price (US$) 1/4/93	FD Shares Outstd	Market Cap ($Mil)	All Debts less cash ($Mil)	Nongold Assets ($ Mil.)	Estimated 5-Year Cap. Exp.	Ticker Symbol	Divd	Current Yield (%)	52-week Range	Explor. Expense ($Mil)	1996E Thous. Gold	Output Oz. Silver	Est. Gold Reserves U.S. + Canada + Australia	Est. Gold Reserves Other Foreign	Reserve Life
Placer Dome Inc#	11.25	236.9	2665.1	-250.0	200.0	750.0	PDG	0.25	2.2	12-9	60.0	1800	14000	7356	5042	6.9
Newmont Mining#	40.50	74.5	3017.3	30.0	0.0	700.0	NEM	0.60	1.5	54-36	55.0	1720	0	19000	3000	12.8
Newmont Gold Co#	31.25	104.9	3278.1	-200.0	0.0	600.0	NGC	0.05	0.2	52-30	14.5	1700	0	20000	0	11.8
American Barrick#	30.38	145.9	4431.7	210.0	0.0	350.0	ABX	0.13	0.4	33-22	5.0	1668	0	27000	0	16.2
Homestake Mining#	10.63	136.5	1450.3	280.0	175.0	450.0	HM	0.20	1.9	17-10	15.0	1400	0	15256	0	10.9
Freeport-M Cu + Au	22.13	215.1	4759.1	-46.9	2500.0	800.0	FCX	0.60	2.7	24-16	10.0	1071	2011	0	29715	34.7
LAC Minerals #	5.00	147.1	735.5	32.0	50.0	275.0	LAC	0.11	2.2	8-5	14.0	900	1500	5785	2010	8.7
Echo Bay Mines#	4.75	122.3	580.9	108.9	0.0	600.0	ECO	0.07	1.5	8-4	5.6	730	13	11691	0	16.0
Battle Mountain#	5.00	84.7	423.5	175.0	0.0	300.0	BMG	0.05	1.0	9-6	12.0	555	140	1914	3316	9.4
Cambior	9.34	36.8	343.7	60.0	50.0	300.0	CBJ.TO	0.12	1.3	10-6	5.0	550	0	1200	1566	5.0
Pegasus Gold	14.00	31.4	438.9	20.0	0.0	250.0	PGU	0.10	0.7	19-11	7.3	475	2000	3460	0	7.3
Santa Fe Pacific#	13.00	180.9	2351.7	180.0	1989.9	125.0	SFX	0.10	0.8	14-11	17.0	475	0	5500	0	11.6
Hemlo Gold	6.00	96.8	580.5	-75.0	0.0	75.0	HEM	0.16	2.7	10-6	13.0	460	0	7030	0	15.3
Amax Gold Inc	8.50	74.4	632.1	97.7	0.0	450.0	AU	0.08	0.9	13-8	11.0	400	300	1900	1600	8.8
TVX Gold	1.97	136.6	268.9	165.5	0.0	60.0	TVXTF	0.00	0.0	4-2	3.0	300	8000	1530	4625	20.5
Teck Corp	13.27	81.7	1084.3	-350.0	600.0	400.0	TEKB.TO	0.17	1.3	19-13	13.0	350	0	4654	0	13.3
Royal Oak Mines	1.50	76.0	114.0	-5.0	0.0	25.0	RYO	0.00	0.0	2-1	0.5	340	0	2000	0	5.9
FirstMiss Gold	5.63	18.0	101.3	29.5	0.0	30.0	FRMG	0.00	0.0	6- 3	2.5	225	0	1258	0	5.6
Nerco#	12.00	39.2	470.4	745.0	400.0	200.0	NER	0.00	0.0	16-11	4.0	180	3500	1789	0	9.9
Hecla Mining#	7.50	34.7	260.3	70.0	47.5	130.0	HL	0.00	0.0	12-7	5.7	150	4000	1500	0	10.0
Coeur d'Alene	10.50	22.1	231.6	-125.0	30.0	150.0	CDE	0.15	1.4	18-11	2.3	110	7000	1675	300	18.0
Agnico Eagle	4.25	31.0	131.8	12.0	0.0	30.0	AEAGF	0.08	2.5	6- 3	4.0	175	200	1300	0	7.4
FMC Gold Co@	4.38	73.5	321.6	-155.0	0.0	75.0	FGL	0.05	1.1	6-4	11.5	175	0	1600	0	9.1
Bema Gold	0.62	39.0	24.2	0.0	0.0	70.0	BGO.TO	0.00	0.0	2-1	0.0	116	0	400	1095	12.9
Glamis Gold	4.06	21.0	85.3	0.0	0.0	22.0	GLGVF	0.05	1.2	4-3	0.3	115	0	900	0	7.8
Crown Resources*	6.75	13.7	92.5	-5.0	0.0	0.0	CRRS	0.00	0.0	9- 5	2.0	100	0	800	0	8.0
Franco-Nevada	20.65	14.8	305.6	-33.0	0.0	0.0	FN.TO	0.24	1.2	26-16	0.2	100	0	1800	0	18.0
Dickenson Mines	3.00	20.6	61.7	30.0	0.0	22.0	DMLA	0.00	0.0	4- 3	1.0	95	0	1175	0	12.4
Rayrock	8.06	16.3	131.4	20.0	75.0	90.0	RAY.TO	0.00	0.0	8-4	3.5	90	0	589	0	6.5
Atlas Corp.	4.88	6.3	30.9	0.0	0.0	40.0	AZ	0.00	0.0	7-4	2.5	80	0	410	0	5.1
Canyon Resources*	1.75	29.7	52.0	6.2	0.0	57.0	CYNR	0.00	0.0	3- 1	0.3	80	0	1625	0	20.3
Euro-Nevada	12.58	17.1	214.8	-35.0	0.0	0.0	EN.TO	0.03	0.2	16-11	0.2	75	0	1500	0	20.0
USMX INC.	2.63	15.0	39.4	-8.0	0.0	10.0	USMX	0.00	0.0	3- 1	2.0	60	0	750	0	12.5
Totals			**29710**	**239**	**6117**	**7436**			**0.9**		**302.9**	**16820**	**42664**	**154347**	**52269**	**9.2**

We define "all debts less cash" to exclude convertible securities already counted in "fully diluted shares outstg." to avoid double-counting them.
We define "reserves" to exclude minority interests, ownership stakes without access to cash flows, recovery losses or mines with cash costs of $300 in one of the two prior years.
We distingluish between "class one reserves" in the U.S., Canada and Australia and those in all other nations having greater political risks, in our opinion.

its in 1993, and some others may register meager earnings too slender to permit meaningful price/earnings calculations.

The valuations of the smaller producers tend to be different from those of the larger 15 firms. The smaller deposits do not enjoy economies of scale, and the smaller companies sometimes have higher fixed administrative or exploration overheads per ounce produced. Consequently, the smaller companies are less profitable per ounce produced on average. The stock market values the smaller firms at roughly $920 per ounce of estimated 1996 production and $90 per ounce of recoverable reserves as defined, which is a 30-40% discount to those of the top 15 firms (Table 2). The market values the smaller firms at roughly 22 times their typically more slender earnings and 7.6 times cash flow margins, although the analysis of price to cash flow or price/earnings ratios for the smaller firms does not appear meaningful owing to their current collective earnings status.

We have graphically presented eight important data series in bar charts (1-8) to simplify the visual presentation of our valuation database.

PROSPECTIVE VALUATIONS WHEN GOLD PRICES RECOVER

The potential profile of the major North American companies in 1996 will be different. Today's 33 major firms with a nearly $29 billion aggregate market value (Table 4) probably will have merged into 20-25 concerns to save $100-200 million in collective administrative and exploration expenses, which translates into a minimum savings of $6-12 per ounce over the 15 million ounces of gold that we expect these firms to produce worldwide.

We look for the average reserve life of the North American-based firms to shrink toward 8.5 years from the recent ten-year level (Table 4) and roughly 12-year level seen five years ago. Moreover, we expect the North American-based gold producers to increase the fraction of their reserves held in LDCs or nations other than the United States, Canada or Australia to rise from 24% at present toward 35%. The combination of production increases, reduced levels of exploration activity, redirection of exploration efforts abroad to avoid North American environmental complications and declassification of higher cost reserves all have served to delay reserve replacement and reduce reserve lives. Property write-offs will continue and mine idlings increase as long as gold prices decline.

During the 1980s we looked to the 24% annualized growth rate of North American gold output to justify premium valuations that typically were twice the level of the overall stock market. Sixfold production growth over the course of a decade and fertile exploration potential commanded investor interest.

Contemporary environmental trends, reduced exploration activity, reduced access to capital and the sustained period of low gold prices all threaten to reduce North American gold output between the years 2000 and 2005. Common stocks tend to become sensitive to reserve lives when they range from five to eight years, such as those now approached by ***Placer Dome, LAC Minerals, Pegasus Gold, Cambior, Royal Oak Mines, FirstMiss Gold*** or ***Agnico-Eagle***. Valuations become quite depressed after the most profitable zones fall within a four-year remaining life as the performance of ***Battle Mountain, FMC Gold*** or ***Amax Gold*** demonstrated in 1990-1992.

We look for the relative valuation of gold shares to suffer if current trends continue and reserve lives dwindle. We estimate that a gold price of $400 will be necessary in 1996 to justify the present

$29 billion market capitalization of the 33 companies that we monitor. The valuation of reserves and production will be about the same as seen today, but the valuation of earnings and cash flow probably will be at a 30-40% discount to today's levels owing to the shortening of reserve lives. Higher gold prices are necessary to generate the increased earnings and cash flows needed to support current valuations.

Placer Dome and ***Newmont Mining*** are the only North American companies that have maintained very large scale gold exploration programs of roughly $50 million annually despite the recent gold price declines. ***Teck Corporation, Newmont Gold, Homestake Mining, Freeport-McMoRan Copper and Gold, LAC Minerals, Hemlo Gold, Santa Fe Gold*** and ***Amax Gold*** each maintain exploration efforts amounting to $12-17 million annually. The exploration programs of ***Battle Mountain, FMC Gold*** or perhaps a few others may be scaled back slightly from the lower end of that range. Expending money sometimes facilitates exploration success.

We believe that plenty of gold remains to be found both in North America and around the world. Man doesn't understand many of the ways that gold occurs in nature. The odds weigh against the delineation of large amounts of gold in 1993-1995, however, owing to contemporary environmental, exploration activity and economic trends and the lead times inherent in the exploration process. Clearly those firms that have laid off most of their geologists have lower odds of discoveries.

While global gold mining costs weigh against too much more erosion in the gold prices, time will run out for some of the undercapitalized firms in 1993 or 1994 unless gold prices rally robustly in the coming year. Investors should be attentive to the financial wherewithal of gold companies in choosing their investments in the coming year.

John C. Tumazos, CFA
(212) 504-4233

Note: Prices are as of the close, January 4, 1992.

Anglo-American Gold (AAGIY): 2⅞
Equinox Resources (EQX.To): C$1.87
Freeport-McMoRan Inc. (FTX)@: 17¼
Galactic Resources (GLC): 1/32
Granges (GXL.To)#: 17/16
Northgate Exploration (NGX)#: ½
RTZ (RTZ): 41½

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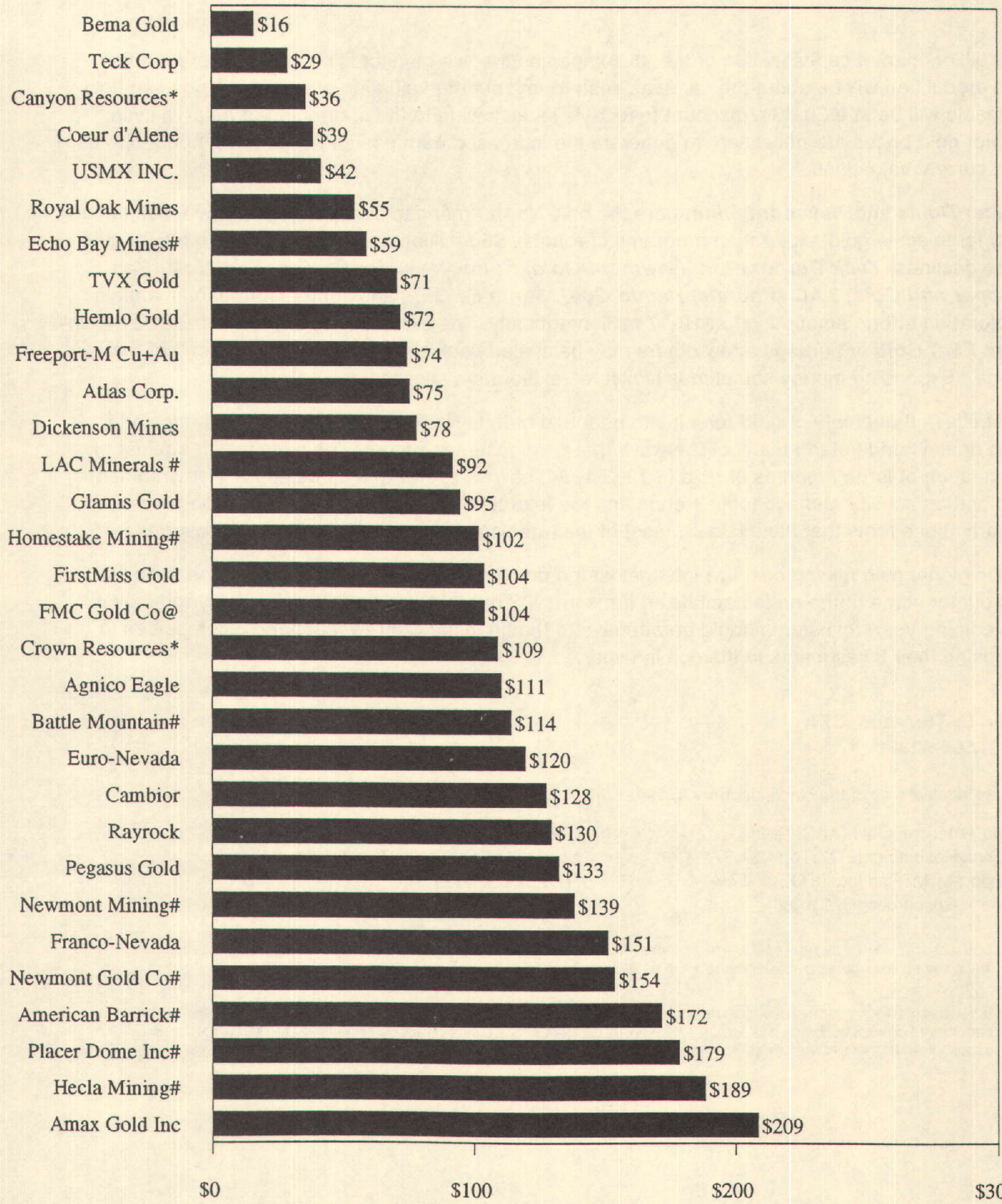
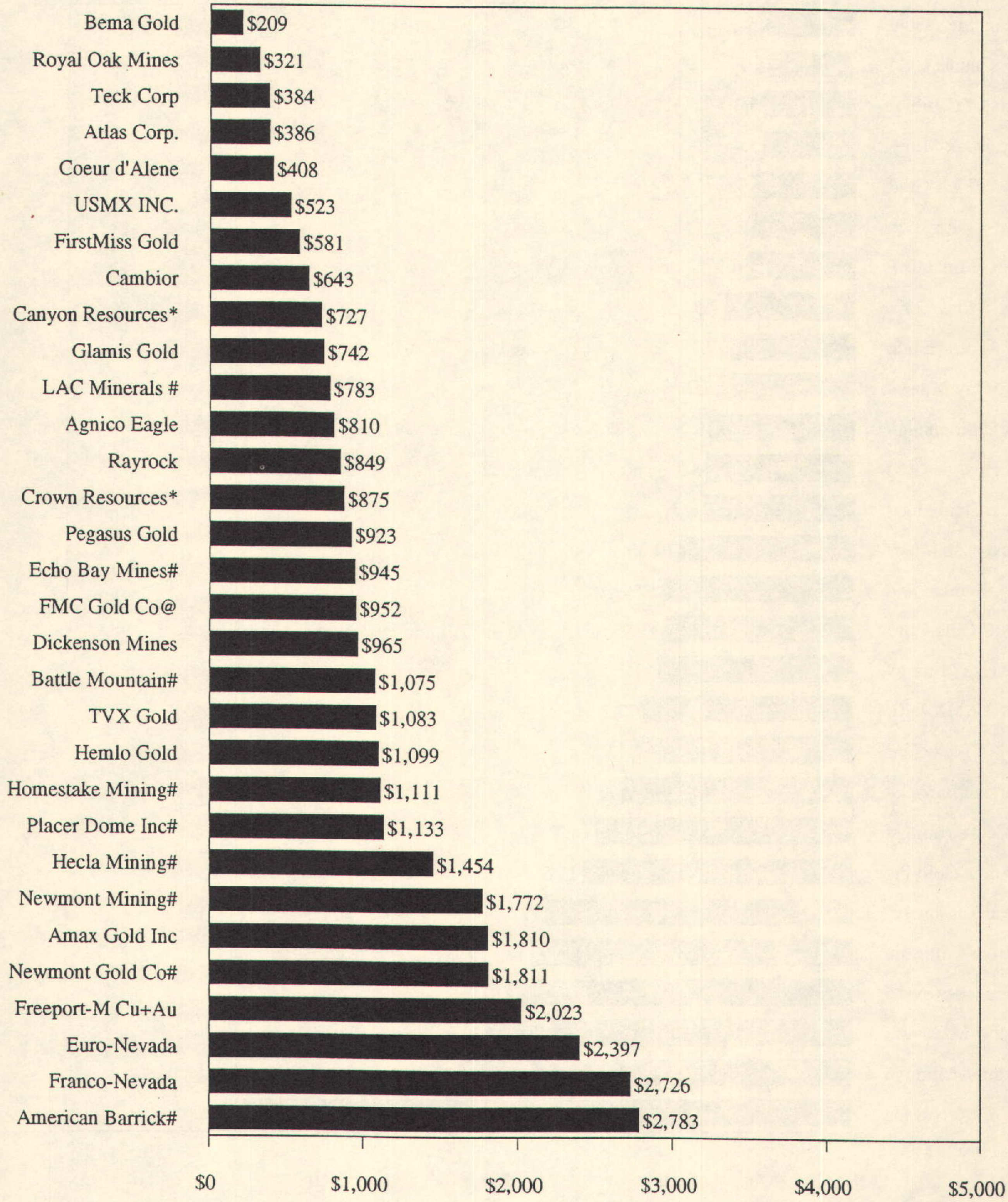
Chart 1
Capitalization per Ounce of Global Reserves



Sources: DLJ estimates; Company reports

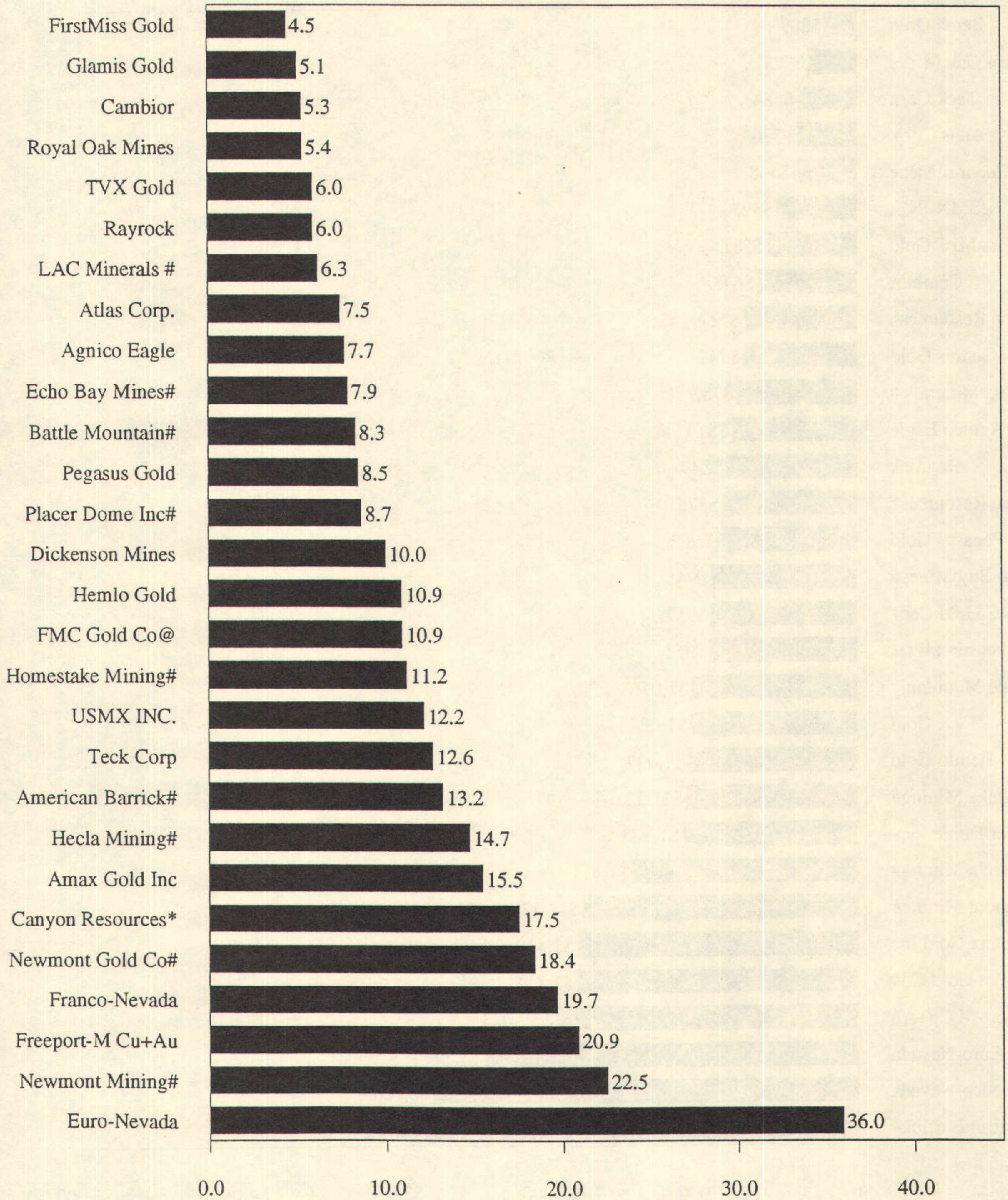
Chart 2

Total Capitalization per Ounce of 1996 Estimated Output



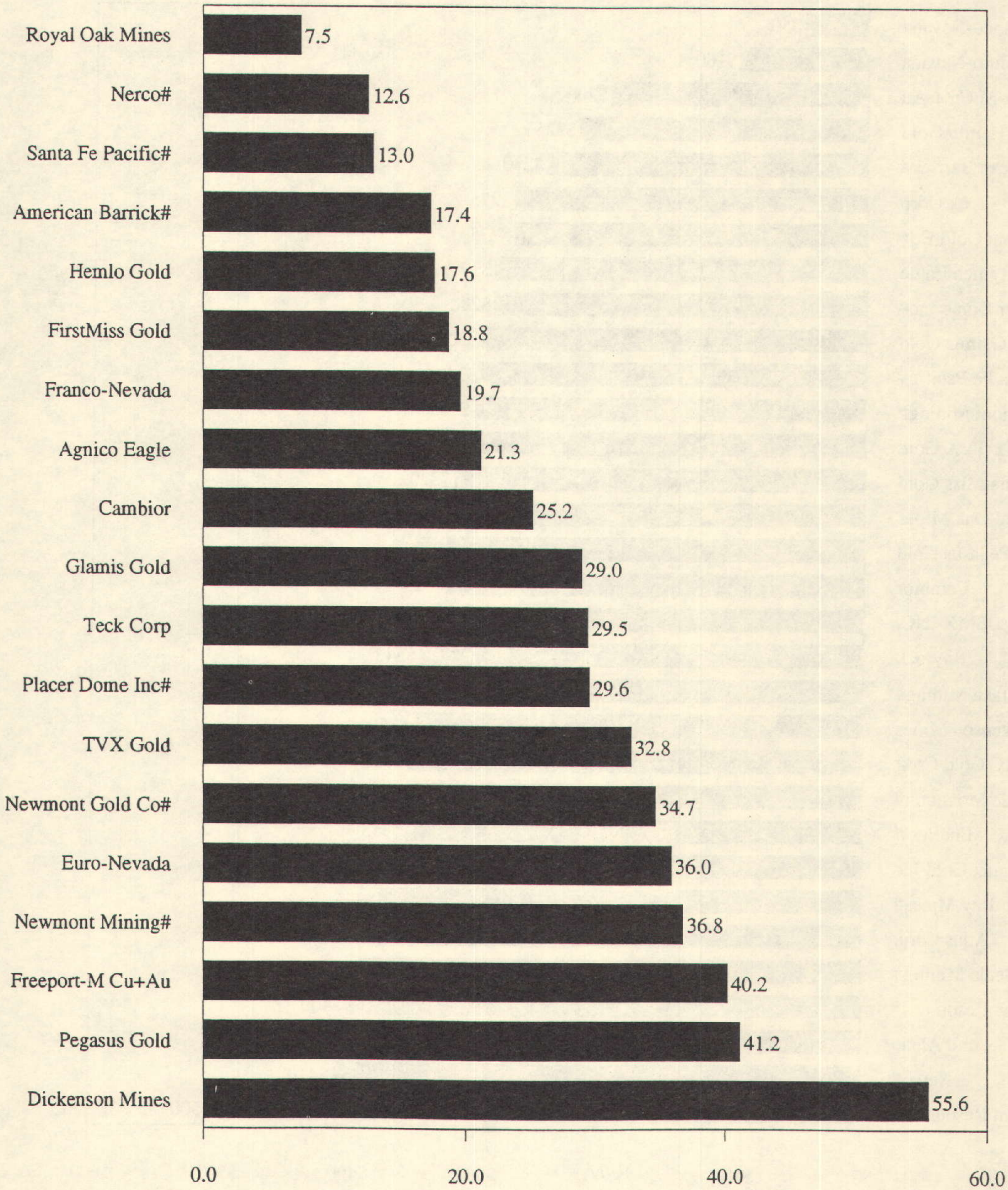
Sources: DLJ estimates; Company reports

Chart 3
1993 Estimated Price to Cash Flow



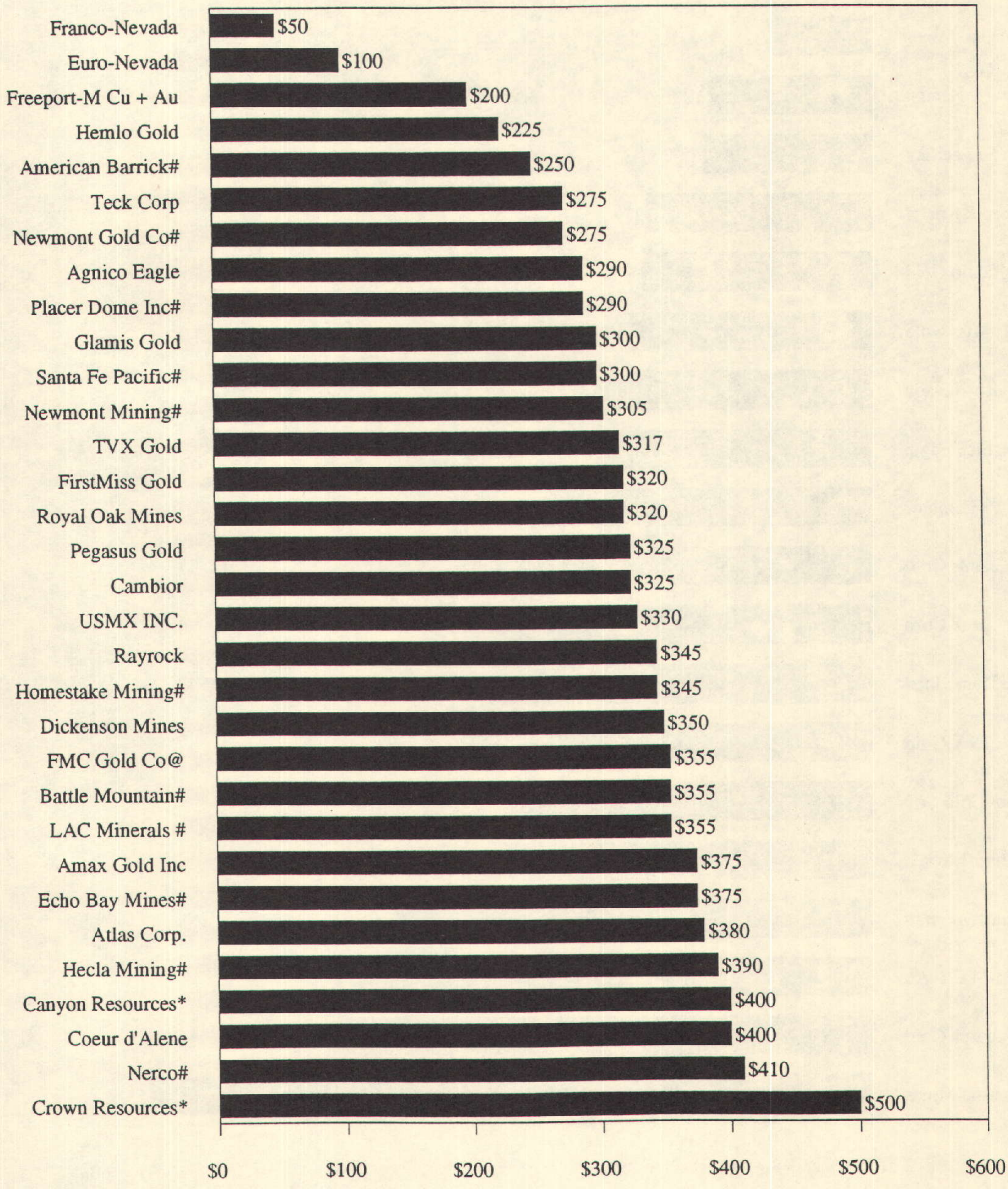
Sources: DLJ estimates; Company reports

Chart 4
1993 Estimated Price to Earnings



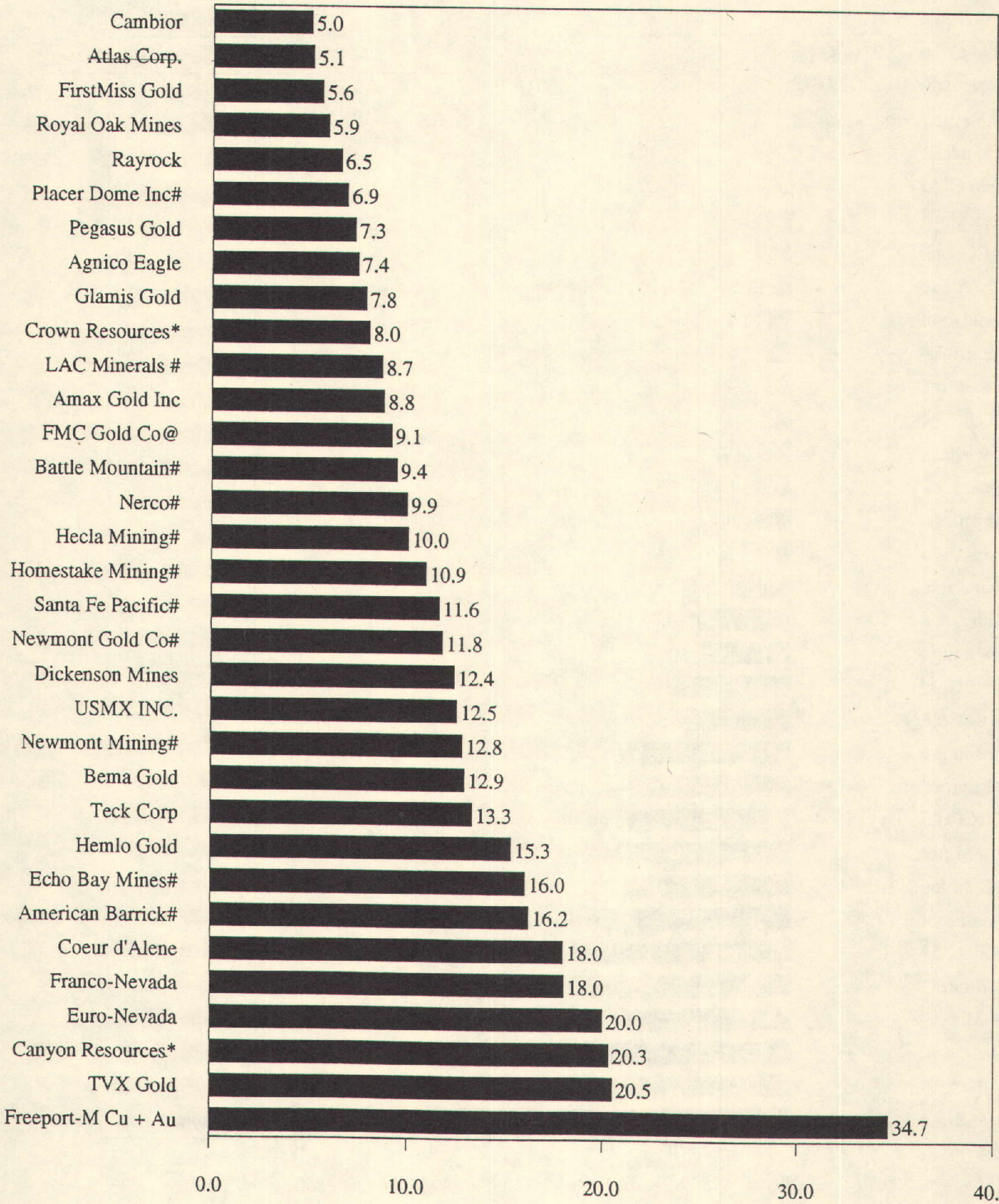
Sources: DLJ estimates; Company reports

Chart 5
Pretax Breakeven Gold Price



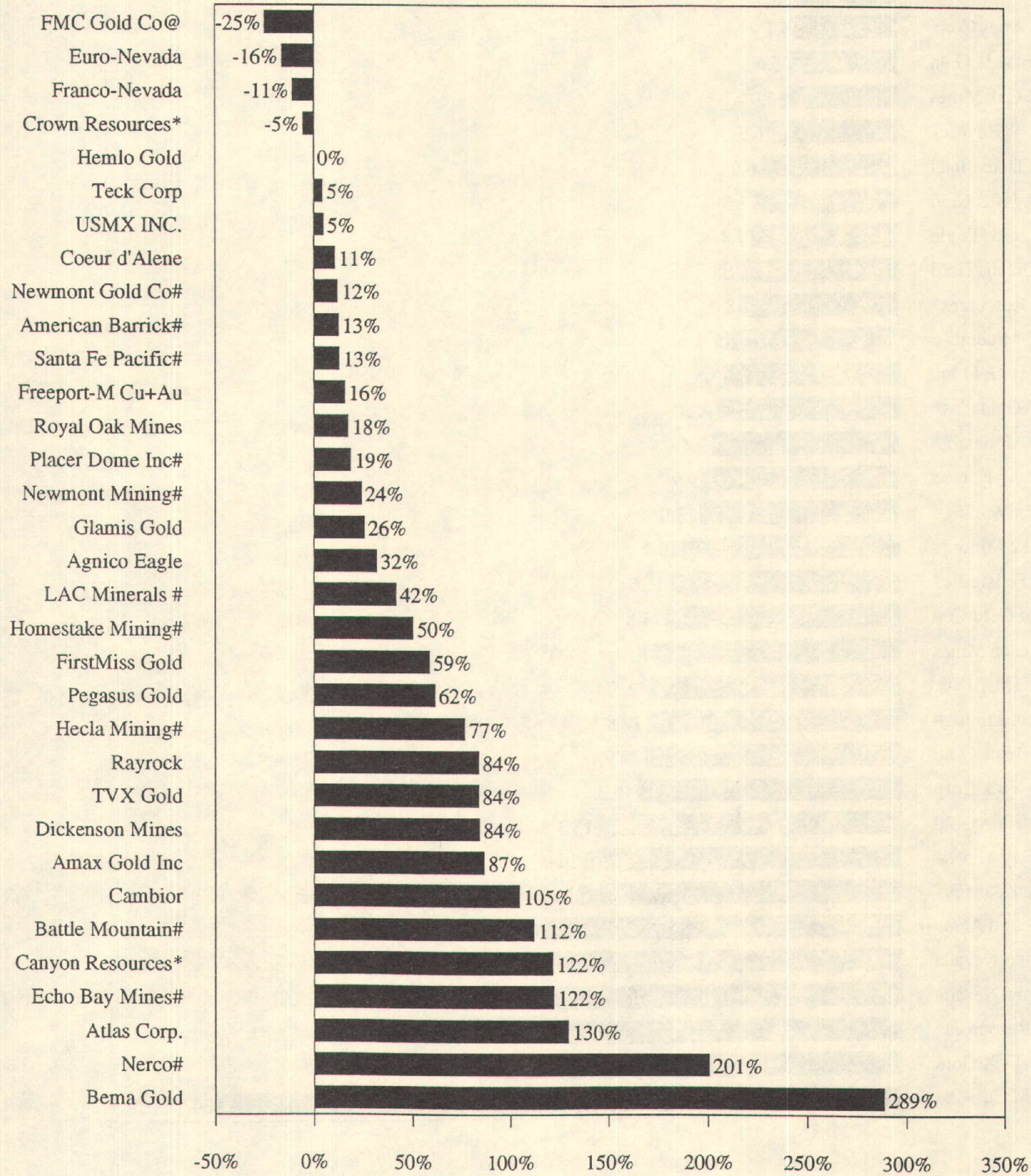
Sources: DLJ estimates; Company reports

Chart 6
Estimated Reserve Life in Years



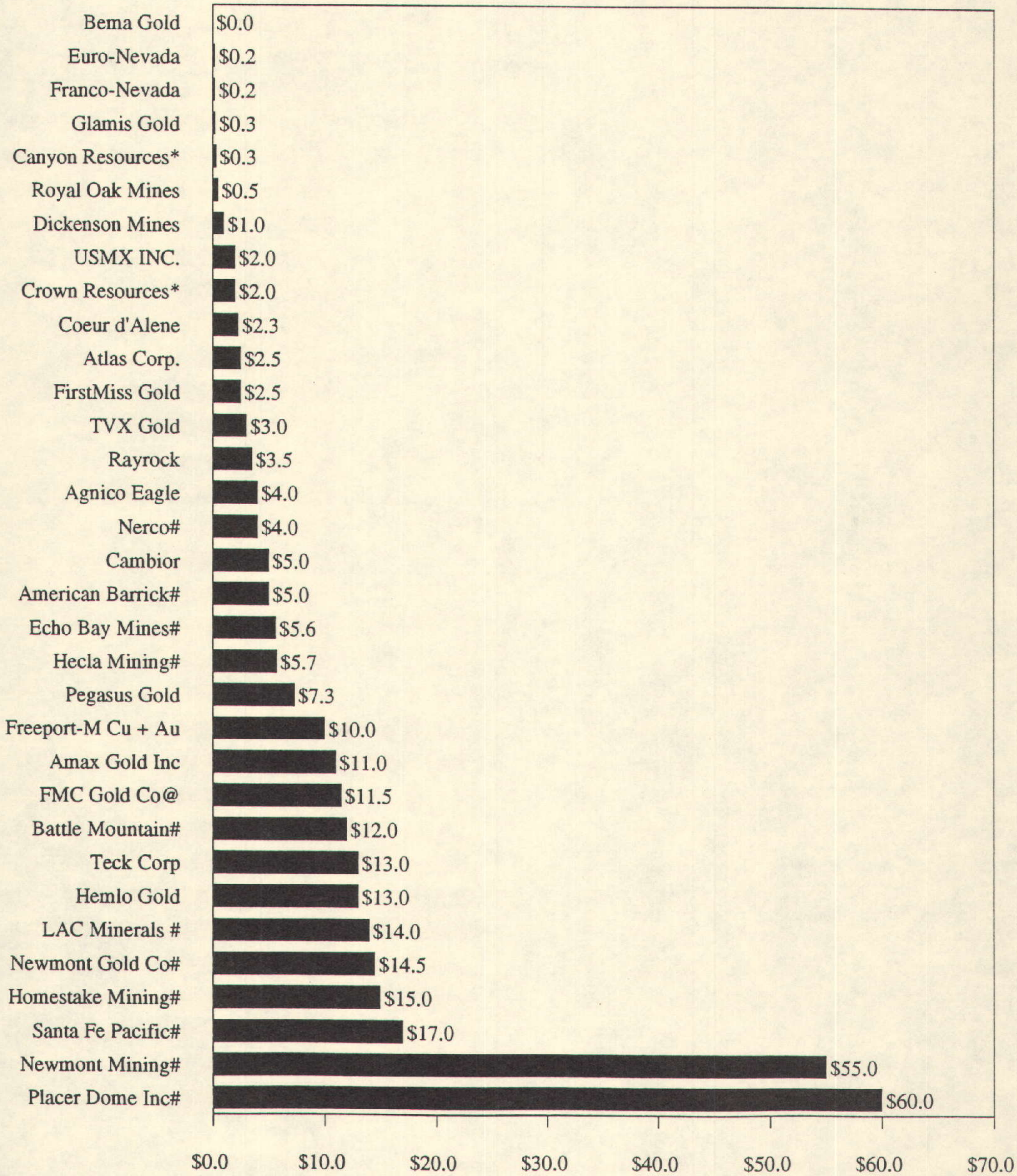
Sources: DLJ estimates; Company reports

Chart 7
Net Debt and Estimated Capital Spending Budget as a Percentage of Market Capitalization



Sources: DLJ estimates; Company reports

Chart 8
Estimated Exploration Budgets
($ in millions)



Sources: DLJ estimates; Company reports